GEOGRAPHIC NEWS BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated under the Federal law as a non-commercial institution for the increase of geographic knowledge and its popular diffusion.)

General Headquarters, Washington, D. C.

Contents for Week of May 11, 1936. Vol. XV. No. 11.

Photograph by Branson De Cou from Galloway

TIN IS THE RATTLE HEARD ROUND THE WORLD

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HOW TEACHERS MAY OBTAIN THE BULLETINS

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Newark Marks Centennial as a City

NEWARK, the New Jersey metropolis, is celebrating its centennial as a city. Founded as early as 1666, Newark adopted its city charter in March, 1836, and the new government took office a month later.

"Although Newark is one of the oldest towns in the United States, it is to Connecticut that we must turn to trace its founders, rather than to Europe," says E. John Long in a communication to the National Geographic Society. "In 1666 Robert Treat and a band of New England Puritans trekked westward and noticed the strategic position of high land on the Passaic River, just above the head of Newark Bay. They founded a settlement near what is now Broad and Market Streets.

Small Specialized Industries

"Newark grew slowly until the railroads pushed across the swampy Meadows and westward to Pennsylvania and upper New York State. Newark then became a center for small specialized industries, employing skilled workmen. The city had the advantage of being close to the seaboard, but out of the high rent districts. Many of its early small industries have grown to huge corporations, but Newark is still one of the most highly diversified cities, industrially, in the country.

"Since the World War Newark has changed amazingly. New high buildings cut through the skyline; in them one finds the clerical forces of many firms whose office address is New York.

"Once small whalers sailed up to the city docks on the Passaic River, but, when ships of deeper draft began to carry world trade, Newark had to be content with lighters and small coastwise vessels. Port Newark, an $18,000,000 municipal development on the upper part of Newark Bay, has again brought ocean-going vessels to the gates of the city.

Planes for "Everywhere"

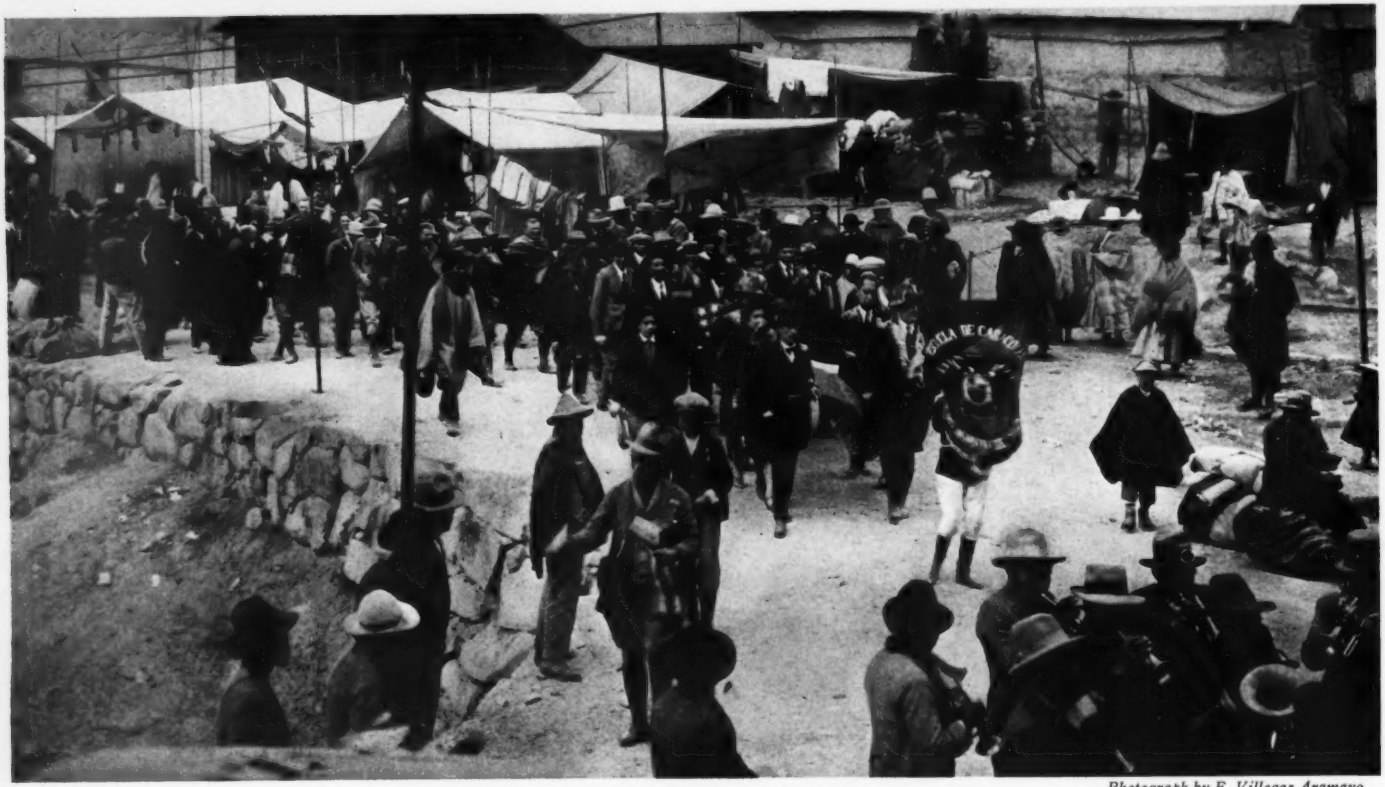
"While dredges were scooping out ship basins, another striking development was taking place nearby, where a section of the once useless and unsightly Meadows has been reclaimed and converted into a huge airport. Opened in 1928, Newark Airport did not really begin to attract traffic until September, 1930. In less than two years it became the world's busiest airport (see illustration, next page).

"Only Newark itself can list all the thousands of different products which pour out of its factories. Some of the most important are: electrical machinery and supplies, paints and varnishes, leather, meats, foundry and machine shop products, chemicals, jewelry, and air-conditioning apparatus.

"Newark also was the birthplace of a number of important inventions, including photographic film, patent leather, roller bearings, the standard electric cell, and a process for making malleable iron. Thomas A. Edison spent part of his life in a small shop here.

"Another famous son, John Cotton Dana, developed many modern library ideas that have since been adopted throughout the nation and abroad. Dana pioneered in the idea that the library should be taken to the people, and he made the Newark Public Library a lively civic center by means of school programs, newspaper articles, public lectures, pamphlets, and exhibitions. Newark's chief literary figure was Stephen Crane, author of 'The Red Badge of Courage.'

"Recently Newark eliminated part of its downtown traffic congestion by build-



Photograph by F. Villegas Aramayo

THERE'LL BE A HOT TIME IN THE "TIN" TOWN TONIGHT!

Bolivia may work hard to produce its share of the world's tin supply, but its mine-workers reserve the right to celebrate just as hard when their three-day Easter festival comes. The native band (lower right) leads a procession through the main street of a mining camp perched 12,000 feet high in the Andes. The corrugated iron building is hospital and school, temporarily eclipsed by booths for the fiesta. Natives live here in stone and mud huts and work in the mines of the next valley, whence tin is shipped to Liverpool, England (see Bulletin No. 2).

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"Tinny" Things Are not "Cheap" Things

THE United States Government has forbidden the export of a product of which this country produces practically none: tin. The embargo is aimed at the sale of tin to foreign countries in its scrap form—old tin cans and the like.

Most of the States have at least small deposits of tin; but none of them has a sufficient quantity to mine profitably, in spite of the fact that American manufacturers use more than half of the world's output of about 117,000 long tons.

The first and largest deposit of the metal in this country was unearthed in Southern California about the time of the famous gold rush. Fortunes were invested in the diggings that were periodically worked for a half century, but they were ultimately deserted with great financial loss. In 1934, deposits in the Black Hills of South Dakota gave up the largest quantity of U. S. tin in that year—about 250 pounds.

Alaska Has Largest U. S. Deposits

The only other American-owned deposits worked, those in the Territory of Alaska, produced about eight long tons.

Tin has had a long career—longer than many of the other metals in popular use to-day. It was known to the ancients and played an important part in enlarging the map of the world. For tin, Mediterranean mariners braved the unknown open Atlantic three thousand years ago. Phoenicians sailed through the "Pillars of Hercules," now the Strait of Gibraltar, and thence to Cornwall, England, to obtain the metal, which they used in bronze castings.

Until the latter part of the last century, Cornwall remained the chief source of tin. Then it surrendered first place to the Federated Malay States, from which nearly one-third of the world's tin supply now comes (see illustration, next page).

The Chinese largely are responsible for the development of Malay deposits. While Malays were satisfied eking out a day-to-day existence, catching a few fish and growing a little rice, shrewd Chinese, who migrated there, braved fever-invested swamps and jungles, and opened tin mines. The palatial homes of Chinese "tin barons" in Malay towns attest what the metal has done for them.

Bolivia Ranks Second as Producer

The metal was later found in the Netherlands Indies and then in Bolivia, which, producing slightly less than one-fifth of the world's output, ranks second to the Malay States (see illustration, page 2). Nearly all the remainder comes from China, Siam, India, Nigeria, Austria, the Congo, South Africa, and Alaska.

The word "tin" has come to be almost synonymous with "cheap." This is perhaps due to the misnaming of the "tin" can, which is really made of sheet steel with a thin coating of tin. It is the sheet steel in the tin can that is cheap, while the small amount of tin—about one-sixtieth—is the most high-priced ingredient.

Tin plays an important part in the life of modern man. Pure tin is used in the manufacture of collapsible tubes for tooth pastes and shaving cream. Solder is nearly one-half tin.

As tin is not sufficiently hard and tough for many other purposes, it is alloyed or mixed with other metals. Bronze is an alloy of tin and copper. Type metal, used in printing, is an alloy of tin, lead, and antimony, to which nickel or copper is sometimes added.

The largest consumers of tin are the manufacturers of tin plate. In a recent

ing a subway. Three and a half miles long, it is now used by trolleys, but can be adapted for use by rapid transit trains. Part of this new underground traffic artery runs in the abandoned bed of the century-old Morris Canal. Newark is one of the five American cities boasting passenger subways.

"Last year Newark also opened a new $42,000,000 railroad station and plaza in the heart of the downtown business district. Electrification of both the Pennsylvania and the Lackawanna railroads through the city has reduced the smoke nuisance."

Note: For a complete list of the State and City articles published in the *National Geographic Magazine*, several of which are accompanied by special map supplements, see the following:

Alabama	December, 1931
Arizona	January, 1929
California	Nov., 1934; March, 1936; June, 1929
Chicago	January, 1919
Colorado	July, 1932
Delaware	September, 1935
Florida	January, 1930
Georgia	September, 1926
Illinois	May, 1931
Louisiana	April, 1930
Maine	May, 1935
Maryland	February, 1927
Massachusetts	April, 1923; March, 1920
Michigan	March, 1928
Minnesota	March, 1935
Missouri	April, 1923
New Hampshire	September, 1931
New Jersey	May, 1933
New York City	November, 1930
New York State	November, 1933
North Carolina	May, 1926
Ohio	May, 1932
Oregon	February, 1934
Pennsylvania	July, 1935; May, 1919
Philadelphia	December, 1932
San Francisco	April, 1932
Texas	June, 1928
Utah	May, 1936
Vermont	March, 1927
Virginia	April, 1929
Washington, D. C.	April, 1935; Nov., 1931
Washington State	February, 1933

Bulletin No. 1, May 11, 1936.

NEWARK'S CROSSROADS OF THE AIRWAYS

Newark has one of the busiest airports in the world. It is possible to fly from there, with few changes of plane, to a score of foreign countries in North and South America, and to most of the chief cities of the United States. A shuttle airplane service has been organized to carry passengers to Lakehurst to make connections with the regular transatlantic run of the *Hindenburg*, new German zeppelin. Beyond the airport clearing rise Newark's skyscrapers.

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"Private" Flags of Public Officials

WHEN the Vice President of the United States was officially granted a flag by Executive Order on February 7, 1936, he joined the distinguished group of civilians of Cabinet rank who have flags of their own. Now the Secretary of Agriculture is the only person of that rank who lacks one.

The Vice President's personal banner is like the President's, with blues and whites reversed. The President's, authorized in 1916, has a blue field charged with the presidential arms, in which the eagle's feathers are embroidered in white. One large star in each corner of these flags indicates the high ranks of the possessors. White for the President's, these stars are blue on the Vice President's flag, with its white field on which the eagle's feathers are embroidered in blue.

Secretary of Navy's Flag Next in Age to President's

The President has had four flags. Gideon Welles, Secretary of the Navy, established the first of these distinguishing banners in 1865. The next year Secretary Welles authorized the flag which, except from 1870 to 1876, has been used by the Secretary of the Navy. It is not known who designed it, with its white "fouled" anchor in the center and its white stars in each of the four corners.

The Secretary of War's flag was authorized in 1897 by order of the Adjutant General's Office. It is scarlet, with a white star in each corner and the coat of arms of the United States in the center.

When a separate portfolio was created for the Secretary of Labor in 1913, the Secretary of Commerce retained the old flag of the combined departments, changing only the shield. The present Commerce flag is blue, with a white star in each corner. In the center is a white shield, bearing a three-masted vessel at the top and a lighthouse at the bottom.

The Department of Labor adopted a flag designed by its Secretary, William B. Wilson. It is white, with the seal of the Department in the center and a blue star in each of the four corners. It is considered the "Department Flag" rather than the personal banner of the Secretary, and the four stars in the corners are said to represent the four bureaus within the Department.

Seven Stars for Interior Department's Work

Franklin K. Lane, Secretary of the Interior, and Dr. Gilbert Grosvenor, President of the National Geographic Society, designed the first Interior flag in 1917. The present flag is light blue, as contrasted with the "Navy blue" ordinarily used in United States flags, with the departmental seal showing a buffalo in the center. The three stars across the top and the four stars across the bottom of the flag represent the seven principal activities of the Department.

It was Postmaster General Will Hays who, in 1921, proposed a flag for the Post Office Department, but the actual design was suggested by Miss Alice B. Sanger, an employee. This flag has a blue field with a white star in each of its four corners. The Post Office seal, a "post horse in speed, with mail bags and rider," is shown in the center.

The Secretary of State was given a flag designed by the Navy Department and approved by Executive Order in 1920. In 1933 a new Executive Order changed the flag slightly. It is now blue with the coat of arms of the United States in the center and a white star in each corner.

year 1,500,000 long tons of tin plate were produced in the United States. Out of this tin plate, several billion tin cans were made, besides other tin plate products.

Note: Supplementary material about some of the countries where tin is mined, also photographs showing some uses of the metal, appear in the following: "Southern California at Work" and "Bolivia, Land of Fiestas," *National Geographic Magazine*, November, 1934; "'Land of the Free' in Asia," May, 1934; "The Greatest Voyage in the Annals of the Sea (Magellan)," December, 1932; "Colorado, A Barrier That Became a Goal," July, 1932; "The Pathfinder of the East (Vasco da Gama)," November, 1927; "Black Hills (S. D.), Once Hunting Grounds of the Red Men," September, 1927; "Singapore, Crossroads of the East," March, 1926; and "A Char-A-Bancs in Cornwall," December, 1924.

NOTICE TO TEACHERS

Only one more issue of the GEOGRAPHIC NEWS BULLETINS will be published before the summer vacations. Teachers and librarians who usually renew their subscriptions at the opening of the school year in the fall can avoid a break in their subscriptions by sending 25 cents at this time. Subscriptions, whenever entered, run for a complete year, or thirty issues. The form below can be used in requesting renewals:

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Bulletin No. 2, May 11, 1936.

HOME PORT OF MANY A TIN CAN—SINGAPORE

Export of a leading share of the world's tin supply keeps Singapore's harbor filled with native craft, tugs, tramps, and freighters. Singapore is a free trade port, inviting all types of Eastern commerce in exchange for cargoes of tin and rubber.

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The Pileated Woodpecker, Who Grubs for Grubs for "Grub"

YOUTHFUL nimrods are asked by the U. S. Biological Survey to lay down guns and slingshots and to "shoot" with their cameras instead. For if the Crested, or Pileated, Woodpecker continues to decrease in numbers he may soon become extinct. This "dandy" of bird society is slow and regular in flight; big, noisy, and conspicuous. In other words, he has all the virtues of a first-rate target.

Muffled ax blows, that make tree lovers cry "Woodman, spare that tree!" may often be traced, not to a man, but to the noisy good-looking Pileated Woodpecker. When tracked down, this dressy grub-eater is usually found chopping away at some dead stub or branch. Digging deep, he extracts and devours thousands of larval enemies of live trees, but does little damage to green wood.

Chips an Axman Would Be Proud of

At rest against a tree trunk in the upright posture characteristic of woodpeckers, *Pileatus* (to use his more convenient Latin name), seems to be clad in black, except for his brilliant scarlet crested skull cap and red stripes (absent in Mrs. P.) along the cheeks. But in flight, white underparts and spots and streaks on wings, neck, cheeks, and throat flash out in contrast to black plumage as he sweeps along (see illustration, next page).

Pileated Woodpeckers are particularly noisy during the mating season and after their children are off their hands late in the spring. Their cackling call resembles that of the Flicker, but it is louder, more ringing, and often more hesitant.

Special adjustments in the brain of *Pileatus* protect it from the terrific shock of constant woodchopping. Large as a crow and, next to the now almost extinct Ivory Billed, biggest of all the woodpeckers, he packs a punch that recalls the action of a compressed-air drill in breaking up paving. With his long tough bill, this hard-hitting flier may peel off long strips of bark to simplify his search for food. Chips of wood 6 or 8 inches long and as wide as a man's hand have been hewn from some trees.

Like the holes in the posts of a rail fence, *Pileatus'* excavations in tree trunks are squarish and mortiselike, not round as are those of some other members of the woodpecker tribe. Of course, he chops out the entranceway to his nest, but then again he may cut holes with no other apparent aim than to search for wiggly worms, or just for the fun of it. Occasionally the cavity he chops in one direction will meet one projected from the other side.

Insects for Every Course

Pileatus deserves every bit of his high reputation as a tree surgeon. He "gets under the skin" of trees and hauls out destructive wood eaters. Ants and woodborers, which together inflict enormous damage on timber, make up 61 per cent of his diet. Another 11 per cent is composed of miscellaneous insects, spiders, and millipedes.

A barbed, horny-tipped tongue helps him to lap up scattering bugs. It is true that in the fall and winter, when he has a struggle to find food (he never migrates north or south with the seasons), he eats considerable vegetable food, but most of this is wild fruits, nuts, and seeds. The farmer need fear no injury to crops or farmyard trees from him.

The designs of the new flags for the Secretary of State, the Attorney General, and the Postmaster General were executed by Mr. A. E. Dubois, of the Quartermaster General's Office.

Attorney General's Emblem

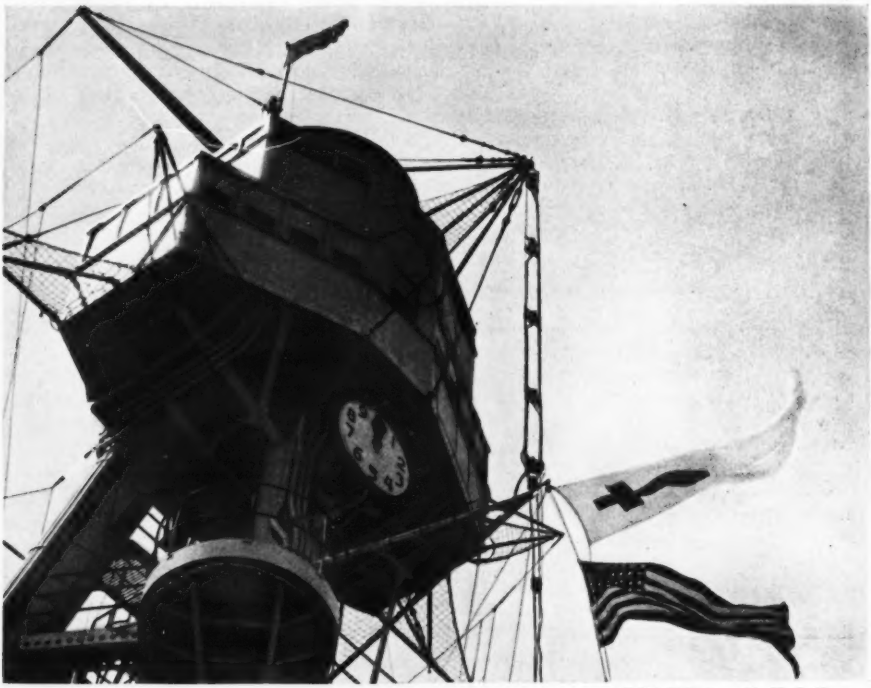
The Attorney General's flag was designed upon suggestions made by Attorney General William D. Mitchell and a group of friends. It is blue with a white star in each corner. The center bears the arms shown on the Department of Justice seal.

The flag of the Secretary of the Treasury was in use in 1917 when the *National Geographic Magazine* published its first flag number. It is believed that a fire in 1920 destroyed records which would show the name of the designer and the first use made of the flag. It is blue, with a circle of thirteen white stars surrounding two fouled anchors.

Note: See "Flags of the World," *National Geographic Magazine*, September, 1934; and "Our Flag Number," October, 1917.

See also in the GEOGRAPHIC NEWS BULLETINS: "Flags—Old and New," week of October 14, 1935; and "Red, White, and Blue World's Favorite Flag Colors," week of March 4, 1935.

Bulletin No. 3, May 11, 1936.



Official Photograph, U. S. Navy

CAN YOU READ THE LANGUAGE OF FLAGS?

These banners tell even distant watchers who know their flags that the President of the United States is attending a church service at sea. At the tip of the main truck flies the Presidential flag, blue with the Presidential arms. Above the Stars and Stripes is the church pennant, the only flag permitted to take that exalted place on the same hoist.

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Draegermen, and Others Who Save Lives Underground

EVERYONE has heard of Canada's famed "Mounties," or Royal Canadian Mounted Police. But "Draegermen" was a comparatively unknown term until a picked crew of these man-moles played an important part in the rescue of two men entombed for 242 hours in the bowels of the earth at Moose River gold mine, Nova Scotia, last month.

The Draegermen who so valiantly burrowed into the underground prison of Dr. D. E. Robertson and C. A. Scadding were ordinary miners specially trained for mine rescue work. Struggling day and night against almost overwhelming odds, they brought to the attention of the world at large the dangers that beset miners underground and modern methods of guarding them against these dangers.

The term "Draeger" refers to the first oxygen helmet devised for use in entering gas-filled mines. It was designed by Bernhard Draeger, of Germany, and was first used about thirty years ago.

Helmets No Longer Used

The United States has thousands of miners who have been given training much the same as that of Canada's "Draegermen," which includes not only the use of oxygen apparatus but knowledge of first aid and mine rescue methods in general. The Draeger oxygen helmet is no longer in general use in the United States and Canada, having been replaced by improved types, but the name lingers because the Draeger helmet first enabled rescue squads safely to enter mines in which the air was unfit to breathe.

Oxygen apparatus was not needed by the rescuers who tunneled through to the buried men in Nova Scotia, but it plays an essential part in rescuing men in the more common types of mine disasters, caused by fires or explosions.

The use of oxygen apparatus allows rescuers to breathe independently of the surrounding atmosphere. The most modern type includes a small steel tank containing enough oxygen to supply a man for about two hours. A clip closes the wearer's nose tightly so that he breathes the oxygen through his mouth, and his exhaled breath passes through a container of cardoxide, a chemical which absorbs harmful carbon dioxide. There is no helmet, but a hose carries the oxygen to an enclosed mouthpiece.

Apparatus Weighs 40 Pounds

The apparatus weighs about 40 pounds, and besides the difficulty of carrying this extra weight, the wearer must learn to use and care for the machine properly, for otherwise it may fail completely to safeguard his life. Mine rescue workers, therefore, are picked men, both for strength and intelligence.

When the United States Bureau of Mines first was organized in 1910, its own men did most of the mine rescue work, but since then miners everywhere have been trained as rescuers. Bureau men act chiefly as advisers and instructors. Since the Bureau was organized, major mine disasters—in which five or more lives were lost—have decreased from 84 for the period of 1906-1910 to one in 1933, three in 1934, and four in 1935.

Strange perils lurk underground for miners. In Colorado, in one gold mining region, the underground water is so acid that it reacts chemically with the carbonates of the surrounding rock to form carbon dioxide and robs the air in the mine of its oxygen. Carbon dioxide poured like water out of the mine mouth until a way

Pileatus nests usually in a dead tree, 15 to 50 feet from the ground. The actual cavity, in which the eggs are laid on a nest of fine chips, may be as much as three feet deep. Two exits are not uncommon, so that when an enemy enters by one, *Pileatus* and family may slip out by the back door.

The species *Pileatus* is now divided into two varieties—the Pileated and the Northern Pileated. The Northern is slightly larger and has a longer bill and more extensive white markings. The range of the Pileated is restricted to the southeastern United States while the Northern Pileated may be found throughout the rest of wooded North America, but rarely west of the Rockies.

Note: Photographs and text references about woodpeckers can be found in "The Okefinokee Wilderness," *National Geographic Magazine,* May, 1934; "Woodpeckers, Friends of Our Forest," April, 1933; "Wild Life of the Atlantic and Gulf Coasts," September, 1932; "Dismal Swamp in Legend and History," July, 1932; "Bird Banding, the Telltale of Migratory Flight," January, 1928; and "Birds of Town and Country," May, 1914.

See also "The Book of Birds," published by the National Geographic Society, which will be sent in the U. S. and Possessions for $2.00 postpaid. A pamphlet describing this and other publications of The Society will be sent on request.

Bulletin No. 4, May 11, 1936.

Photograph by Dr. A. A. Allen

BANKING FOR A THREE-POINT, TREE-SIDE LANDING

The Pileated Woodpecker, named for his peaked red cap or *pileus,* displays his wide, white wing-bands only when in flight. Although he is a swift worker, he may have taken a month to prepare his home-cavity in the nesting tree. Sometimes the mother bird lays eggs before the interior decoration is complete. Muffled knocking in the tree, for days after eggs are laid, tells of trimming and remodeling still in progress.

was found to pump air into the mine, creating pressure that forced the carbon dioxide gas back into the crevices of the rock.

In Montana a copper mine fire has been burning since 1884. Sulphur, in waste rock that was piled around wood timbers in old workings, burns with the wood and gives off the poisonous carbon monoxide that motorists fear, as well as two asphyxiating gases, sulphur dioxide and, to a less extent, sulphur trioxide.

The Moose River gold mine, scene of the recent entombment and rescue, is in Halifax County of Nova Scotia, about 40 miles northeast of the city of Halifax. The district is difficult to reach, being several miles from a branch railroad or any improved highways. In addition to gold-bearing rocks, the region also has important deposits of tungsten and arsenic ores.

This part of Halifax County is also a hunter's and fisherman's paradise. The tumbling streams are filled with trout and salmon, and in the thick forests moose, deer, and partridges abound.

Those trying to locate the mine on even large scale maps may have difficulty, because "Moose River" is a favorite name in the province of Nova Scotia. There is a postoffice near New Glasgow, in Pictou County; another near Parrsboro in Cumberland County; and a short stream near Annapolis Royal in Annapolis County—all bearing the same title. There is also a town called Moser River, only a few miles east of the Moose River gold mine.

Note: Additional material about Nova Scotia and mines and mining of North America will be found in the following: "Flying Across the North Atlantic," *National Geographic Magazine*, September, 1934; "Gentlemen Adventurers of the Air," November, 1929; "Canada from the Air," October, 1926; "The Charm of Cape Breton Island," July, 1920; "Coal—Ally of American Industry," November, 1918; "Industry's Greatest Asset—Steel," August, 1917; "Treasure Chest of Mercurial Mexico," July, 1916; and "Great Britain's Bread Upon the Waters," March, 1916.

Bulletin No. 5, May 11, 1936.

Photograph from U. S. Bureau of Mines

APPLYING MINE-INSURANCE AT THE POINT OF A GUN

A shot of liquid concrete from a spray-gun reinforces the walls of mine tunnels, giving some protection against cave-ins. It covers the surface with a thin layer of "artificial rock" and checks weathering and crumbling. This ounce of prevention is sometimes worth a ton of Draegermen, or other mine rescue workers.